

**TITLE**

**FOLDING MAGNETIC HOLDING WRAP FOR CUPS OR MUGS**

**Field of Invention**

The present invention relates generally to a holding apparatus for a liquid-containing device and, more particularly, to a cup holding device that is capable of receiving a cup and mounting it on a metal support or surface.

**Background of Invention**

Cup holders have been designed to ease the handling of cups. Conventional cup holders typically have a cylindrical shape which is designed to encircle the sides of a cup while leaving its bottom essentially open. These holders can affix about the curvature of the cup. They may have a fluted appearance allowing retention of a cup with tapered sides. Cup holders have also been incorporated into other structures to provide a fixed-in-place support, such as in a dashboard, door or center section of a motor vehicle, or in the armrest of a movie theater or stadium chair. Holders may also be donned in an insulated or padded pocket of a garment or a lumbar carrying pack to free the hands of a user.

Cup holders may be constructed of a variety of materials, depending upon the intended use. For example, holders comprise of rigid materials, such as a synthetic polymer, plastic or polyethylene vinyl chloride, or flexible plastic, foam, plastic covered foam or neoprene. They may also be constructed of pressed material such as paper pulp and have multiple nubs or depressions therein.

In addition to aiding the gripability of the cup, cup holders can enhance a cup's insulation ability, block condensation or add a decorative feature.

In all of these cases where cup holders have been designed for the ease of the user, none have offered an adjustable, folding portable metal-supportable cup holder.

Accordingly, it is an object of the present invention to provide a cup holder having the capability of being supported by a metal magnetic accepting support or surface. It is a further object of the invention that the holder be adaptable to accommodate a variety of liquid-

containing devices such as, for example, different types and sizes of cups, mugs, bottles and cans. In other embodiments, the magnetic holding wrap can be adapted to hold bathroom products, such as toothbrushes, toothbrush holders, razors, shampoo or conditioner bottles and other items. More particularly, an object of the invention is to provide a reusable folding cloth or  
5 reinforced neoprene magnetic wrap that can be covered having a fastener to allow the ends of the wrap to removably secure about a liquid-containing device. Another object is to provide a wrap that insulates, comforts and magnetically attaches to any magnetic accepting surface while supporting a liquid-containing device.

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## Summary of Invention

The present invention is directed towards an improved holder for holding a liquid-containing device and mounting it on a metal support or surface. A liquid-containing device, or as referred to generally herein as a "cup," includes, but is not limited to, a cup, mug, can, bottle, flask or other similar container. The invention generally comprises a wrap element having a first surface, a second surface, two ends, at least one attachable means on each such surface, and a magnetic means provided on or in a portion of the first surface. The wrap element has a generally elongated form, but in certain situations a square shape is better suited for the intended end use. For instance, the shape of the wrap element can be designed to cover a more, or less, substantial portion of the cup outer surface or a larger or smaller cup by altering elongation.  
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The wrap element is made of any material in a size and durability capable of accommodating a cup. Preferably, it is constructed of a synthetic polymer, such as polychloroprene or neoprene rubber, or foam. Neoprene rubber is known to display outstanding physical toughness, flexibility, resistance to damage from use and weather and has good resilience. The rubber may be used raw or exposed, or it can be covered with a natural or  
25 synthetic cloth for the finished wrap element. The covered wrap element offers a decorative feature as well as a protective barrier to those who may be allergic to rubber. Regardless of the cover, the wrap element first surface may have ornamental features or multiple coverings may be applied to the whole or a part of the first surface to add a decorative or textured feature.

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The magnetic means may consist of one or more magnets affixed to the first surface with  
30 adhesive and covered with a patch to secure the magnet or magnets to the first surface. Alternatively, the magnetic means may sit in a crevice or indent portion of the first surface

thereby making the magnet means flush with the wrap element first surface. It may also be completely embedded into the wrap element such that magnetic means is entirely or partially concealed by the wrap element . Preferably, the magnetic means is centrally positioned between the side lengths of the first surface and equal distant between the ends.

5        The elongated wrap element is generally shaped so that the two ends detachably engage with each other. Side lengths of the elongated wrap element may be essentially parallel to each other, creating a more uniform rectangle for accommodating an upright cup. To accommodate a tapered cup, the side lengths may have a slightly semi-circular shape. The ends are straight or generally curved to ease handleability.

10      One attachable means resides at the end of the first surface and another communicating attachable means resides on the opposite end of the second surface such that it can detachably engage the first surface attachable means. Attachable means comprise of fasteners such as magnetic or nylon buckles, magnets, snap locks, adjuster bars, zipper pulls, slides or cord locks. The attachment means should be capable of tightly affixing about the container and are preferably selected to offer a way of adjusting the length of the wrap element to thereby accommodate a range of cup sizes.

15      Generally, an embodiment of the present invention is made according to the following steps. An elongated piece of neoprene of about 1/16-1/2 inch thick, e.g. neoprene having a rough surface and a smoother surface with a backing, is obtained. From a central part of the first surface of the neoprene at least one small square portion is removed. Preferably, the removed portion measures about 1/4-5/8 inch in length by 1/4-5/8 inch in width. It may extend completely through the neoprene resulting in a hole, or cut just a superficial depth of the neoprene leaving a crevice on the surface. Multiple portions may be removed depending upon the desired design. For wrap elements in which the portion provides a hole, a patch such as a  
20      piece of cloth is affixed to the outside or second surface of the wrap element about the hole portion. One or more magnets are then placed into the hole or crevice. Preferably, this assembly is done by placing the wrap element on a magnetized steel and/or iron plate. The magnetized plate helps to align the magnet polarity, positive side facing outwards, reverse polarity repel hence place attracting side magnet out; or the reverse may be done.  
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30      Another cloth, preferably nylon cloth, is affixed to all or a portion of the first surface of the wrap element. VELCRO® end fasteners are affixed to opposite ends of each side of the wrap

element so that both ends communicate and removably attach securely to each other. Generally, the cloth and fastener items can be affixed to the neoprene using any convenient means, such as glue, paste, staples, pins or stitches.

The user places the wrap element around a cup and fastens first attachable means to the  
5 second attachable means to securely affix it thereabout. Once securely about the cup, this combination can be mounted onto a magnetic accepting support or surface while, additionally, providing standard features associated with cup holders. Useable magnetic accepting surfaces are endless. They can range from outdoor structures, such as a galvanized light post, to an indoor wall support. To disengage the combination from the metal support, the user twists and  
10 lifts it off. The user avoids the hassle and strain of balancing a cup in situations where a metal support is nearby, such as a sign at the bus stop, a file cabinet at work, or a parking meter post. Additionally, the wrap element provides insulation to the container contents and manages possible condensation.

An important feature of this invention is that it can be designed to allow the user to use it with a variety of sized cups. Another important feature is that the strength of the magnetic means is significant while the overall weight is not burdensome to the user. Optionally, the user can also use multiple wrap elements simultaneously together, i.e., one wrap element is secured about a surface or worn about a limb of a person and another wrap element, of opposite polarity, is removably attached thereto at magnetic means.

Other features, aspects and advantages of the present invention will become better understood or apparent from a perusal of the following drawings, detailed description of the invention and appended claims.

### **Brief Description of the Drawings**

In the drawings which are attached hereto and made a part of this disclosure:

25 Figures 1 and 1a illustrate a top view of two embodiments of a first surface of the present invention.

Figures 2 and 2a show a perspective view of two embodiments of the present invention.

Figure 3 shows a top perspective view of an embodiment of the wrap element in an attached position.

Figures 4 and 4a illustrate a top view of the first surface having two crevices for holding a magnetic means in two embodiments of the present invention.

Figures 5 and 5a show another perspective view of two embodiments of the present invention.

5 Figures 6 and 6a provide a cross section of the wrap element attachment means in an embodiment of the present invention.

Figures 7a and 7b show perspective views of an assembled cup holder formed to hold a cup according to an embodiment of the present invention.

10 Figure 8 shows a plan view of one surface of an embodiment of the present invention wherein one end attachment means has a tab portion.

Figure 9 shows a perspective view of an embodiment of the present invention having a bottom.

15 Figures 10 and 10a illustrate a cross section of the wrap element having a bottom portion in two embodiments of the present invention.

Figure 11 illustrates another view of the wrap element with bottom portion having a magnetic means.

Figure 12 shows an embodiment of the second surface of the present invention having exposed texture portions.

### Detailed Description of the Invention

20 In a presently preferred embodiment of the present invention, by reference to Figure 1, a cup holder 10 is shown unassembled and is in the form of an elongated wrap element 11. Wrap element 11 is defined by a length having two distal ends, 12 and 13, and two sides, 14 and 15, a first surface 20 and a second surface 30. Optionally, it has a bottom 17. Each of surfaces 20 and 30 also has an attachment means, 21 and 31, that is designed to removably attach with the other 25 and be positioned along wrap element 11 at opposite ends from one another. A magnetic means 50 is provided on or in a portion of the first surface 20.

In one embodiment, wrap element 11 is constructed out of a piece of neoprene having a thickness of about 1/16 to 1/2 of an inch, preferably about 1/8 of an inch. The length varies. Preferably, it is about 10 to 14 inches, and more preferably the length is about 11 to 11 1/2 30 inches. First and second surfaces can have a texture to improve gripability with a cup and/or the

user. Grip may be further enhanced with installation of an additional covering. A decorative pattern can be applied to the first surface 20. It may be print directly on first surface 20 or comprise an additional layer of natural or synthetic cloth, such as nylon cloth affixed thereto.

The attachment means, 21 and 31, are positioned so that when wrap element 11 is used in combination with a cup they detachably engage with each other thereby allowing the wrap element 11 to adapt tightly to the contours of the cup. In an embodiment of the invention, first surface attachment means 21 is provided near to end 12 in a position between sides 14 and 15, as shown in Figure 1. As shown in Figure 2, second surface attachment means 31 is provided on second surface 30 along end 13 in a position between sides 14 and 15. The attachment means 21 and 31 are designed to detachably engage each other when they are fastened together.

Preferably, the attachment means 21 and 31 comprise fasteners, magnets or hook and latch closures, such as VELCRO®. For example, first attachable means 21 contains the hooks and second attachable means 31 contains a receiving latch closure. The selected attachment means is capable of providing a reliable hold sufficient to support a liquid-containing device according to the present invention.

Magnetic means 50 may consist of one or more magnets. In an embodiment, the magnetic means 50 consists of a relatively small magnet that has a magnetic force superior to that of a commonly known and used magnet (e.g., refrigerator magnet). Typically, such common magnets have strength of about 2.0 – 4.3 kilogauss. Preferably, magnetic means 50 contains a magnet 51 having a strength of about 30 to 42 kilogauss. In a more preferred embodiment, a 35 kilogauss (neodymium-35) ( $Nd_2Fe_{14}B$ ) magnet is used, and the magnet is about a 1/4 to 1/2 inch square in size and about 1/32 inch thick. Preferably, magnetic means 50 is centrally positioned on the first surface 20, although other positions work amply as well. In an alternative embodiment, magnetic means 50 is located at or near to an end of wrap element 11 and a corresponding attracting part is at the other end on the opposite surface of the wrap element thereby providing the dual functionality of both magnetic means 50 and attachment means 21 and 31.

Magnetic means 50 can be affixed to the first surface 20 with adhesive and covered with a protective coating or patch 55 to secure it to first surface 20 as illustrated in Figure 3. The protective coating 55 can be a laminant or include a piece of nylon-cloth that is about 1/32 inch or less in thickness and be sized just large enough to cover magnet means 50. It can also provide

an excess trim for holding to said first surface 20, such as in Figure 1. The protective coating 55 can also cover the entire first surface 20 of wrap element 11. Preferably, it has the dimensions of 2 1/4 to 2 1/2 width by 11 1/4 length. Alternatively, multiple magnets 51 are provided in a crevice or indent portion 22 of the first surface 20, as shown in Figure 4. Indent portion 22

5 includes a portion of the first surface 20 that has a width and depth contoured to the dimensions of the magnetic means 50 and, preferably, as illustrated in Figures 5 and 6, such that the top surface of magnetic means 50 is flush with the first surface 20.

The wrap element 11 is essentially rectangular in shape. Preferably, it has a slight curvature giving a semi-circular shape along sides 14 and 15 and rounded distal ends 12 and 13.

10 The curvature can be adjusted to form a conical shape that accommodates tapered cups or provides greater support and gripability to traditional cylindrical cups. When in use, a user simply places wrap element 11 about a cup or mug and overlaps the two attachable ends 21 and 31 so that they securely join with each other as illustrated in Figures 7a and 7b. Once the cup is tightly fit about the cup, the holder combination can be mounted onto any metal magnetic accepting support by positioning the portion of the cup holder having the magnetic means against the metal support. To disengage the holder combination, it is twisted slightly at the magnet and lifted off. The mechanics of this will become evident when in use.

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In another embodiment of the invention, attachment means 21 and 31 are incorporated into the wrap element 11 and flush with the exterior surface. One (or both) attachment means can have an adjustable point of closure with the corresponding attachment means. It can comprise a tab or extended portion. Attachment means 21 (and or 31) may form a tab portion 21a extending the length of a part of one end of the wrap element, as in Figure 8. In a preferred embodiment, Tab 21a extends part of the end by about 1/2 inch and measures about one inch wide. Tab 21a can thereby ease disengagement of the attachment means for removing the wrap element from a container, and accommodate an increased range of container shapes and sizes.

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A bottom portion 17 can be provided with the holder as illustrated in Figure 9 or, alternatively, as in Figure 10, in another embodiment of the present invention. Bottom 17 is attached to or incorporated into one of the side lengths, 14 or 15, of wrap element 11 to provide additional support for holding the cup in place and to prevent it from slipping out should the grip

30 not be properly secured. Preferably, bottom 17 folds and expands, and is comprised of a flexible material, such as polyester, neoprene or an elastic cloth or web material, and is foldable. In a

preferred embodiment, bottom portion 17 is comprised of the same piece of material as wrap element 11 to resemble a single unit and, may be cast from the same piece of material to form an integrated single unit. If a separate, bottom portion 17 can be removably attached or partially or entirely affixed to the length 14 or 15, by any mechanism that ensures its fit, including fasteners, 5 stitches, snaps, zippers, etc., such as in Figure 11.

The bottom 17 can also include a magnetic means 50a. This may be the same or different as magnetic means 50, but preferably employs one or multiple magnets 51a. Ideally, magnet 51a is of the same power and dimension as that of magnet 51. It can sit on bottom 17 or in a crevice thereof, much like on the wrap element first surface 20, as shown for example in Figures 10 and 10 11.

In another embodiment, multiple cup holders 10 are used together. One wrap element 11 is secured about the arm of a wood chair. Another wrap element, holding a container, is removably attached to the first holder at their respective magnetic means. To successfully hold, the magnet means must have opposite polarity. One of the means may also be wrapped about an 15 arm or leg of a person. It is contemplated that the invention will offer multiple applications. The length of the wrap element can be adjusted to accommodate various sizes of liquid-containing devices. For instance, in addition to holding cups and mugs, it has been designed to hold bottles for disinfectants, window wash, shampoos, etc.

Cup holder 10 can be provided with a decorative covering along a portion or the entire 20 length as shown in Figure 1. Decorative elements can be incorporated into the neoprene substrate or affixed thereto. Such decoration includes, for example, of commercial information , company logo, art, scenic, advertising etc. The cup holder 10 can further have a texture. As indicated in Figure 12, covering 60 is applied to second surface 30 leaving one or more openings 25 65 to the second surface 30. Surface 30 can be the neoprene or other substrate used, thereby increasing the gripability of wrap element 11 when contact with a container. Textured neoprene should add to gripability especially when in the container "sweats" or condensation forms. The texture, for example, includes a silky nylon cloth similar to some camping gear. Other combinations of openings 65 with surface 30 can prove advantageous. These features can be selected and refined for the desired use and design of the wrap.

30 **EXAMPLE**

By way of an example, a cup holder was constructed in accordance with the perimeters disclosed herein. One-eighth of an inch thick piece of neoprene was cut to have a semi-curved shape. The length was about twelve inches and width of about two inches to four inches. Two pieces of VELCRO® were attached at one end of the first surface oriented essentially parallel to  
5 the end and the two cooperating pieces at the opposite end on the second surface aligned to pair with those on the first surface. Two magnets of about 1/2 inch square were affixed to the center of the first surface with a rubber cement adhesive and covered with a patch using nylon cloth.

The wrap element was then wrapped into an essentially cylindrical shape about a soda can. The combination was placed against the metal post of a street sign and positioned so the  
10 magnetic means was against the magnetic accepting surface of the post. It immediately held fast to it. The combination was tested and found to mount effectively while supporting cups containing liquids weighing up to about one pound. The combination was removed by twisting and lifting it from the post.

While the foregoing has been set forth in considerable detail, the embodiments and preferences are presented for elucidation and not limitation. It will be appreciated from the specification that various modifications of the invention and combinations of elements,  
15 variations, equivalents, or improvements therein may be made by those skilled in the art, and are still within the scope of the invention as defined in the appended claims.